

**NOZZLE STRUCTURE HAVING OPENABLE LIQUID COSMETIC  
DISCHARGING HOLE**

**BY**

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**BACKGROUND OF THE INVENTION**

**1. Field of the Invention**

The present invention relates to a nozzle structure having an openable liquid cosmetic discharging hole perforated on the main body of the nozzle on the top end of a cap for use in a cosmetic container, whereby liquid cosmetic can be discharged through the hole when the cosmetic container is pumped. With an application of the above-described nozzle structure, it is possible to prevent a cosmetic product in the container from flowing out of the container, and to inhibit the cosmetic product from being rancid and decomposed by indraft of air and alien substances through the discharging hole.

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**2. Description of the Related Art**

It has been a long time since a cosmetic container was covered with a nozzle in a variety of discharging structures, such as, a screw cap or an openable plate molded to the nozzle. However, these related art nozzle structures exposed many problems.

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In case of using screw cap containers, it was difficult to control pressure for sealing the discharging hole hermetically. Hence, the screw cap was easily loosened up and got lost, leaving the discharging hole open. On the other hand, when the openable plate is molded to the nozzle, the joint between the openable plate and the nozzle had to be bent every time the openable plate was opened. Thus, the joint was easily cut off or broken down, and the nozzle was eventually broken away from the

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container.

Particularly, since high functional cosmetic products are usually put in containers that are elegant in appearance, the nozzle could not be an exception of this trend. From this point of view, the above-described related art nozzle structures were  
5 not appropriate for keeping abreast with such fashion.

Unfortunately, the high functional cosmetic products being introduced in recent years are made of fresh natural extracts. Therefore, they are more exposed to acidification or decomposition.

Although it is desired to assemble every member for constructing containers for  
10 the high functional cosmetic products in such a manner that the containers are always airtight to prevent acidification or decomposition of contents therein, the nozzle is often opened, and contaminated by fingers when pumped, resulting in a higher possibility of acidification or decomposition through the nozzle.

Accordingly, there is a need to develop an improved nozzle structure for a high  
15 functional cosmetic product container that is relatively small, wherein the nozzle structure is improved not only in sealing function but also in appearance.

### **SUMMARY OF THE INVENTION**

It is, therefore, an object of the present invention to provide an improved nozzle  
20 structure having an openable liquid cosmetic discharging hole, which is easy to use through a smooth rotation of an openable member and effective for protecting a cosmetic product from acidification and decomposition by completely closing the nozzle discharging hole.

To achieve the above object, there is provided an improved nozzle structure, in  
25 which a user can easily operate an openable member, which is separately molded yet

rotatably mounted on the main body of the nozzle, by using one finger while holding a cosmetic container in one hand. Therefore, the easy-to-use openable member, whether in an open state or in a closed state, can safely bear on a maintaining apparatus, resulting in an improved sealing effect, and the appearance thereof is also improved.

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### **BRIEF DESCRIPTION OF THE DRAWINGS**

The above objects, features and advantages of the present invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings, in which:

10        Fig. 1 is a perspective view of a nozzle main body and an openable member in separation according to the present invention;

Fig. 2 is a state diagram of a nozzle main body according to the present invention, in which an openable member is assembled to the main body and a discharging hole is closed;

15        Fig. 3 is a cross-sectional view of a discharging hole of a nozzle main body according to the present invention, in which the discharging hole is shut by an openable member;

Fig. 4 is an open state diagram of a discharging hole of a nozzle main body according to the present invention; and

20        Fig. 5 is a cross-sectional view illustrating an open state of a discharge hole of a nozzle main body according to the present invention.

### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

A preferred embodiment of the present invention will be described herein below  
25    with reference to the accompanying drawings. In the following description, well-known

functions or constructions are not described in detail since they would obscure the invention in unnecessary detail.

As shown in Fig. 1, a nozzle structure of the present invention includes a main body 100 composed of a small body 10 with a small external diameter, a head 20 with a large external diameter, a pressing piece 30 formed at one side of a top surface, and a liquid discharging hole 40 perforated towards front; an openable member mounting portion 200 formed of a recessed surface 201 at a front part of the nozzle main body 100; and an openable member 300 being rotatably mounted on the opening member mounting portion 200.

The openable member mounting portion 200 formed of the recessed surface 201 includes a support surface 203 that is a step 202 lower than the top surface of the main body 100, the step 202 being formed at a central portion of the recessed surface 201 towards inside of the main body 100; a protruded arc surface 204 formed on front/rear surfaces of a head 20 where the recessed surface 201 ends; and a hinge 205 formed on the protruded arc surface 204.

The openable member 300 includes a covering surface 301 formed at an inner central portion; a closed/opened surface 302 of the liquid discharging hole 40; a recessed hollow for maintaining a closed state of the openable member 303 formed at an inside surface of both ends of the openable member 300; a recessed hollow for maintaining an opened state of the openable member 303 formed at the top surface of both ends; and a hinge hole 305 perforated at both ends of the openable member 300, to which the hinge 205 is inserted.

Operational effects of the above-described nozzle structure will now be described.

The arc openable member 300 becomes elastic through an installation of the

openable member 300 at the recessed surface 201 of the openable member mounting portion 200 formed at the front part of the main body 100. By inserting the hinge 205 to the hinge hole 305 perforated on both ends of the openable member 300, the openable member 300 can be rotatably mounted on the recessed surface 201 of the openable member mounting portion 200, as shown in Fig. 2.

Fig.2 and Fig. 3 respectively illustrate a closed state of the openable member 300. To be more specific, a liquid discharging hole surface 302 of the openable member 300 tightly shut the liquid discharging hole 40. In this state, the protruded arc surface 204 is adhered closely to the inside of the recessed hollow for maintaining the closed state of the openable member 303 that is formed at the inside of both ends of the openable member 300, whereby the openable member 300 can maintain its closed state.

When the openable member 300 is closed, the covering surface 301 formed at the inside of the central part of the openable member 300 bears on the support surface 203 formed at the openable member mounting portion 200 of the main body 100. In this manner, a sealing effect on the liquid discharging hole 40 can be improved, and the openable member 300 is not easily rotated to the downward direction of the openable member mounting portion 200 and opened.

When a user wants to discharge a cosmetic product from the closed container, what the user has to do is to pull the openable member 300 up using his fingers. Then, the openable member 300 is opened up in the vertical direction, as shown in Figs. 4 and 5, and the liquid discharging hole 40 is opened up accordingly. When the openable member 300 is erected in the vertical direction, the protruded arc surface 204 is adhered closely to the inside of the recessed hollow for maintaining the closed state of the openable member 303 that is formed at the inside of both ends of the openable member 300, whereby the openable member 300 can safely maintain its opened state.

Especially, because the openable member 300 is rotatably mounted on the openable member mounting portion 200 of the main body 100, the user can more conveniently open or close the openable member by using his fingers while holding the cosmetic container in one hand.

5 Moreover, since the openable member mounting portion 200 is formed of the recessed surface 201 on the main body 100, the openable member 300 is rarely escaped from the head 20 of the main body 100, which means its sealing performance is excellent. Also, the openable member 300 is not easily open during packing or even  
10 not get lost.

In conclusion, the openable member of the invention is so easy to use and effective for tightly sealing the liquid discharging hole perforated on the main body of the nozzle that virtually no alien substance or air can be flown in the cosmetic product through the liquid discharging hole. Therefore, the cosmetic product in the container  
15 can be safe from acidification or decomposition.

While the invention has been described in conjunction with various embodiments, they are illustrative only. Accordingly, many alternative, modifications and variations will be apparent to persons skilled in the art in light of the foregoing detailed description. The foregoing description is intended to embrace all such  
20 alternatives and variations falling with the spirit and broad scope of the appended claims.